AMERICAN SOCIETY OF PENSION PROFESSIONALS AND ACTUARIES
JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES
SOCIETY OF ACTUARIES

Enrolled Actuaries Pension Examination, Segment A

EA-2, Segment A

Date: Wednesday, November 4, 2009
Time: 8:30 a.m. – 12:30 p.m.

INSTRUCTIONS TO CANDIDATES

1. Write your candidate number here ____________. Your name must not appear.

2. Do not break the seal of this book until the supervisor tells you to do so.

3. Special conditions generally applicable to all questions on this examination are found at the front of this book.

4. All questions should be answered in accordance with laws, rules and regulations in effect as of June 30, 2009.

5. This examination consists of 59 multiple-choice questions of varying value. The point value for each question is shown in parenthesis at the beginning of each question. Total point value is 160.

6. Your score will be based on the point values for the questions that you answer correctly. No credit will be given for omitted answers and no credit will be lost for wrong answers; hence, you should answer all questions even those for which you have to guess. Answer choices C, D, and E will be considered incorrect answers on True-False questions.

7. A separate answer sheet is inside the front cover of this book. During the time allotted for this examination, record all your answers on side 2 of the answer sheet. NO ADDITIONAL TIME WILL BE ALLOWED FOR THIS PURPOSE. No credit will be given for anything indicated in the examination book but not transferred to the answer sheet. Failure to stop writing or coding your answer sheet after time is called will result in the disqualification of your answer sheet or further disciplinary action.

8. Five answer choices are given with each question, each answer choice being identified by a key letter (A to E). For each question, blacken the oval on the answer sheet which corresponds to the key letter of the answer choice that you select.

9. Use a soft-lead pencil to mark the answer sheet. To facilitate correct mechanical scoring, be sure that, for each question, your pencil mark is dark and completely fills only the intended oval. Make no stray marks on the answer sheet. If you have to erase, do so completely.

10. Do not spend too much time on any one question. If a question seems too difficult, leave it and go on.

11. While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions on the exam booklet.

12. Clearly indicated answer choices in the test book can be an aid in grading examinations in the unlikely event of a lost answer sheet.

13. Use the blank portions of each page for your scratch work. Extra blank pages are provided at the back of the examination book.

14. When the supervisor tells you to do so, break the seal on the book and remove the answer sheet.

    On side 1 of the answer sheet, space is provided to write and to code candidate information. Complete Blocks A through G as follows:

    (a) in Block A, print your name and the name of this test center;

    (b) in Block B, print your last name, first name and middle initial and code your name by blackening the ovals (one in each column) corresponding to the letters of your name; for each empty box, blacken the small rectangle immediately above the "A" oval;

    (c) write your candidate number in Block C (as it appears on your ticket of admission for this examination) and write the number of this test center in Block D (the supervisor will supply the number);

    (d) code your candidate number and center number by blackening the five ovals (one in each column) corresponding to the five digits of your candidate number and the three ovals (one in each column) corresponding to the last three digits of the test center number, respectively. Please be sure that your candidate number and the test center number are coded correctly;

    (e) in Block E, code the examination that you are taking by blackening the oval to the left of “Course EA-2, Segment A.”

    (f) in Block F, blacken the appropriate oval to indicate whether you are using a calculator; and

    (g) in Block G, sign your name and write today's date. If the answer sheet is not signed, it will not be graded.

    On side 2 of your answer sheet, space is provided at the top for the number of this examination book. Enter the examination book number, from the upper right-hand corner of this examination book, in the four boxes at the top of side 2 marked "BOOKLET NUMBER."

15. After the examination, the supervisor will collect this book and the answer sheet separately. DO NOT ENCLOSE THE ANSWER SHEET IN THE BOOK. All books and answer sheets must be returned. THE QUESTIONS ARE CONFIDENTIAL AND MAY NOT BE TAKEN FROM THE EXAMINATION ROOM.

EA-2A Fall 2009
Answer Key
Updated 11/24/2009

Exam Question	Answer
1	B
2	B
3	B
4	B
5	A
6	B
7	B
8	B
9	B
10	A
11	B
12	A
13	E
14	B
15	D
16	C
17	E
18	D
19	D
20	A
21	B
22	A
23	D
24	E
25	B
26	C
27	B
28	C
29	C
30	C
31	B
32	B
33	A
34	B

Exam Question	Answer
35	D
36	D
37	A
38	D
39	D
40	D
41	B
42	C
43	B
44	C
45	D
46	C
47	A
48	D
49	C
50	E
51	A
52	B
53	A
54	D
55	B
56	A
57	B
58	B
59	B

Data for Question 1 (1 point)

A 2009 plan year contribution is made on 4/1/2010.

Consider the following statement:

> When calculating the 1/1/2010 value of plan assets, this contribution must be discounted using the 2010 effective interest rate.

Question 1

Is the above statement true or false?

(A) True

(B) False

Data for Question 2 (1 point)

A plan is established in 2008 and was exempt from establishing shortfall amortization bases for 2008 and 2009. The plan has no prefunding balance at 1/1/2010.

Consider the following statement:

> The plan is exempt from establishing a shortfall amortization base for 2010 if the ratio of plan assets to the funding target as of 1/1/2010 is at least 96%.

Question 2

Is the above statement true or false?

(A) True

(B) False

Data for Question 3 (1 point)

Consider the following statement:

Frozen plans are exempt from the quarterly contribution requirement.

Question 3

Is the above statement true or false?

(A) True

(B) False

Data for Question 4 (1 point)

Consider the following statement regarding excise taxes for a multiemployer plan:

> The initial tax rate on an accumulated funding deficiency is 10%.

Question 4

Is the above statement true or false?

(A) True

(B) False

Data for Question 5 (1 point)

Effective 12/31/2009, a plan is frozen and the plan's IRC section 417(e) assumptions are amended as described below:

	Stability period	Look-back period
Before 2010	Calendar year	four months
After 2009	Calendar year	one month

Consider the following statement:

> Voluntary lump sum distributions with an annuity starting date in 2010 must be no less than the distribution based on the September 2009 or the December 2009 minimum present value segment rates, whichever produces the larger value.

Question 5

Is the above statement true or false?

(A) True

(B) False

Data for Question 6 (1 point)

Type of plan: Multiemployer.

Status: Critical.

A rehabilitation plan is adopted on 11/1/2009.

Consider the following statement:

> The plan may not be amended to increase future benefit accruals after the date of adoption of the rehabilitation plan and prior to the end of the rehabilitation period.

Question 6

Is the above statement true or false?

(A) True

(B) False

Data for Question 7 (1 point)

The applicable interest rate for a calendar year qualified defined benefit plan is based on the segment rates in effect for September before the plan year that contains the IRC section 417(e) lump sum distribution date.

Consider the following statement:

> The plan sponsor must use the September 2009 segment rates to determine the funding target at 1/1/2010.

Question 7

Is the above statement true or false?

(A) True

(B) False

Data for Question 8 (1 point)

On 1/1/2009, a plan with 600 participants has a funding target attainment percentage of 78% if at-risk assumptions are not used and 67% if at-risk assumptions are used.

Consider the following statement:

> The plan is in at-risk status as of 1/1/2010.

Question 8

Is the above statement true or false?

(A) True

(B) False

Data for Question 9 (1 point)

Effective interest rate: 6%.

Funding standard carryover balance as of 1/1/2010: $0.

Prefunding balance as of 1/1/2010: $0.

For the 2010 plan year, the minimum required contribution as of 1/1/2010 is $900,000.

Contributions for the 2010 plan year:

Date	Amount
9/15/2011	$700,000

Consider the following statement:

> An excise tax of $20,000 is imposed on the plan sponsor as of 9/15/2011 for failure to meet the minimum funding standard.

Question 9

Is the above statement true or false?

(A) True

(B) False

Data for Question 10 (2 points)

The pension plan has been frozen since 12/31/1999.

The actuarial value of assets has always been market value.

Funding target attainment percentages:

1/1/2007	92.8%
1/1/2008	93.1%
1/1/2009	94.1%
1/1/2010	95.7%

The plan has always had more than 500 participants.

Consider the following statement:

> There are no quarterly contribution payments required for the 2010 plan year.

Question 10

Is the above statement true or false?

(A) True

(B) False

Data for Question 11 (2 points)

A plan has a prefunding balance as of 1/1/2009. Any prefunding balance remaining after employer elections is adjusted with interest during the plan year to 1/1/2010.

X = The effective interest rate
Y = The actual rate of return on the market value of the plan's assets

Question 11

Which interest rate is used for crediting interest on the prefunding balance?

(A) ***X***

(B) ***Y***

(C) The greater of ***X*** or ***Y***

(D) The lesser of ***X*** or ***Y***

(E) The correct answer is not given by (A), (B), (C), or (D) above.

Data for Question 12 (2 points)

This question consists of an assertion in the left column and a reason in the right column.

ASSERTION

Mortality rates for disabled participants developed based on Social Security data are generally not suitable for use in pension plans that use a more liberal definition of disability.

REASON

A more liberal definition of disability means that participants considered to be disabled under that definition would generally be healthier than those eligible for Social Security disability benefits.

Question 12

Which of the following statements is true?

(A) Both the assertion and the reason are true statements and the reason is a correct explanation of the assertion.

(B) Both the assertion and the reason are true statements, but the reason is NOT a correct explanation of the assertion.

(C) The assertion is a true statement, but the reason is a false statement.

(D) The assertion is a false statement, but the reason is a true statement.

(E) Both the assertion and the reason are false statements.

Data for Question 13 (2 points)

This question consists of an assertion in the left column and a reason in the right column.

ASSERTION

The actuary for a plan that is spun-off from a larger plan should continue to use the termination and retirement assumptions that were used by the actuary for the plan before spin-off, without independent verification of the assumptions.

REASON

The anticipated experience for the spun-off portion of the plan is always consistent with the anticipated experience for the full plan before spin-off if the plan provisions in the spun-off plan are unchanged.

Question 13

Which of the following statements is true?

(A) Both the assertion and the reason are true statements and the reason is a correct explanation of the assertion.

(B) Both the assertion and the reason are true statements, but the reason is NOT a correct explanation of the assertion.

(C) The assertion is a true statement, but the reason is a false statement.

(D) The assertion is a false statement, but the reason is a true statement.

(E) Both the assertion and the reason are false statements.

Data for Question 14 (3 points)

Funding standard carryover balance as of 1/1/2010: $10,000.

Prefunding balance as of 1/1/2010: $10,000.

Selected valuation results as of 1/1/2010:

Funding target	$980,000
Target normal cost	50,000

The actuarial value of assets was changed on 1/1/2010.

Actuarial value of assets as of 1/1/2010:

Before the method change	$955,000
After the method change	940,000

Funding target attainment percentage for 2009: 100%.

7-year shortfall amortization factor for 2010: 5.9574.

The employer makes a single contribution of ***$X*** on 1/1/2010 in **the smallest amount that satisfies the minimum funding standard** for the 2010 plan year.

Question 14

In what range is the absolute value of the change in ***$X*** due to the asset method change?

(A) Less than $3,000

(B) $3,000 but less than $13,000

(C) $13,000 but less than $23,000

(D) $23,000 but less than $33,000

(E) $33,000 or more

Data for Question 15 (3 points)

Plan effective date: 1/1/2000.

Normal retirement benefit: 3% of final year salary for each year of service.

Assumptions:

Segment rates	{5.0%, 6.0%, 7.0%}
Salary increases	3% per year

Funding standard carryover balance as of 1/1/2010: $15,000.

Actuarial (market) value of assets at 1/1/2010: $60,000.

Data for sole plan participant:

Date of birth	1/1/1965
Date of hire	1/1/2000
2009 salary	$90,000

Selected actuarial factors:

Interest Rate	$\ddot{a}_{65}^{(12)}$
5.0%	10.00
6.0%	9.00
7.0%	8.00

Question 15

In what range is the deductible limit for the 2010 tax year?

(A) Less than $55,000

(B) $55,000 but less than $65,000

(C) $65,000 but less than $75,000

(D) $75,000 but less than $85,000

(E) $85,000 or more

Data for Question 16 (4 points)

Type of plan: Multiemployer plan.

Plan effective date: 1/1/2008.

Actuarial cost method: Entry age normal.

Valuation interest rate:

Before 2010	7.5% per year
After 2009	7.0% per year

Annual amortization charge/(credit) for an actuarial experience base established 1/1/2009: $(80,000).

There are no other amortization bases established before 1/1/2010.

Experience loss during 2009: $150,000.

Increase as of 1/1/2010 due to the change in the valuation interest rate:

Accrued liability	$200,000
Normal cost	18,000

Question 16

In what range is the change in the minimum required contribution for 2010 as of 1/1/2010 due to the change in the valuation interest rate?

(A) Less than $37,300

(B) $37,300 but less than $38,800

(C) $38,800 but less than $40,300

(D) $40,300 but less than $41,800

(E) $41,800 or more

Data for Question 17 (2 points)

Plan year: 7/1 – 6/30.

Lump sum basis: IRC section 417(e) applicable interest rate and applicable mortality.

Look-back month: The third month preceding the first day of the stability period.

Stability period: 1 calendar quarter.

Data for participant Smith:

Date of birth	11/1/1944
Date of termination	10/31/2009
Date of payment	11/1/2009
Monthly accrued benefit	$1,000

Related annuity factors using applicable interest rate and applicable mortality by month:

Month	$\ddot{a}_{65}^{(12)}$	Month	$\ddot{a}_{65}^{(12)}$
October 2008	11.24	May 2009	11.86
November 2008	11.33	June 2009	11.71
December 2008	11.48	July 2009	11.93
January 2009	11.68	August 2009	11.87
February 2009	11.68	September 2009	11.71
March 2009	11.87	October 2009	11.87
April 2009	11.83	November 2009	11.71

Question 17

In what range is Smith's lump sum on 11/1/2009?

(A) Less than $135,000

(B) $135,000 but less than $137,500

(C) $137,500 but less than $140,000

(D) $140,000 but less than $142,500

(E) $142,500 or more

Data for Question 18 (3 points)

Type of plan: Multiple employer.

Unrelated employers A, B, and C are participating employers of the multiple employer plan.

Smith's date of hire by both employer A and employer B: 1/1/2005.

Before 2009, Smith is employed solely by employers A and B.

Effective 1/1/2009 Smith is employed solely by employer C.

Accrued benefit: 1% of compensation for each year (career average).

Smith's work history:

	Compensation from employer		
Plan year	Employer A	Employer B	Employer C
2005	$153,000	$123,500	
2006	255,000	45,500	
2007	260,000	84,000	
2008	175,000	150,000	
2009			$375,000
2010			390,000

Assumed 2010 IRC section 401(a)(17) limit: $260,000.

Question 18

In what range is Smith's accrued benefit as of 12/31/2010?

(A) Less than $14,000

(B) $14,000 but less than $15,000

(C) $15,000 but less than $16,000

(D) $16,000 but less than $17,000

(E) $17,000 or more

Data for Question 19 (3 points)

Plan effective date: 1/1/2000.

	1/1/2009	1/1/2010
Funding standard carryover balance	$1,250,000	$1,325,000
Prefunding balance	950,000	1,100,000

Selected valuation results:

	1/1/2009	1/1/2010
Actuarial (market) value of assets	$25,500,000	$32,400,000
Funding target	25,000,000	32,500,000

The plan sponsor elects to use the carryover balance and prefunding balance, to the extent available, to offset the minimum required contribution in 2010.

Consider the following statements:

I. The plan sponsor may use the carryover balance toward the minimum funding requirement at 1/1/2010.

II. The plan is exempt from establishing a shortfall amortization base as of 1/1/2010.

III. The plan sponsor is subject to quarterly contribution requirements in 2010.

Question 19

Which, if any, of the above statement(s) is (are) true?

(A) I and II only

(B) I and III only

(C) II and III only

(D) I, II, and III

(E) The correct answer is not given by (A), (B), (C), or (D) above.

Data for Question 20 (2 points)

Type of plan: Multiemployer plan.

Selected valuation results as of 1/1/2010:

Actuarial accrued liability under unit credit cost method	$1,000,000
Actuarial (market) value of assets	820,000

The first funding deficiency for the plan is projected to occur in 2016.

The plan is not projected to be insolvent within the next 9 years.

The plan was not in endangered, seriously endangered, or critical status for the 1/1/2008 or 1/1/2009 plan years.

Question 20

For purposes of IRC Section 432, what is the plan's status for 2010?

(A) Endangered

(B) Seriously endangered

(C) Critical

(D) None of the above

(E) Cannot be determined using the given information.

Data for Question 21 (2 points)

Normal form of payment: Life annuity.

Optional forms of payment:

Joint and 50% survivor annuity (QJSA)
Joint and 75% survivor annuity (QOSA)
Joint and 100% survivor annuity
Lump sum
10-year certain and life annuity
Social security level income

Question 21

How many of the above optional forms of payment are subject to the minimum present value requirements of IRC section 417(e)?

(A) 1

(B) 2

(C) 3

(D) 4

(E) 5 or more

Data for Question 22 (3 points)

Average annual compensation for accrued benefits is defined as the highest consecutive 36 months of compensation.

Data for participant Smith:

Date of retirement	10/31/2008
Monthly compensation during 2005	$17,500
Monthly compensation during 2006	18,000
Monthly compensation during 2007	18,250
Monthly compensation during 2008	19,500

Question 22

In what range is the average annual compensation that should be used in the calculation of Smith's accrued benefit as of 10/31/2008?

(A) Less than $218,000

(B) $218,000 but less than $219,000

(C) $219,000 but less than $220,000

(D) $220,000 but less than $221,000

(E) $221,000 or more

Data for Question 23 (3 points)

	1/1/2009	1/1/2010
Funding standard carryover balance	$6,000	$5,100
Prefunding balance	0	0

Selected valuation results:

	1/1/2009	1/1/2010
Target normal cost	$100,000	$110,000
Shortfall amortization charges	50,000	55,000
Funding target attainment percentage	89%	91%
Effective interest rate		6.6%

On March 1, 2010, the plan sponsor makes an election to apply the entire funding standard carryover balance to offset the minimum required contribution for the 2010 plan year.

The employer makes a quarterly contribution of ***$X*** on 4/15/2010 in the **smallest amount that satisfies the quarterly requirement** for the 2010 plan year.

Question 23

In what range is ***$X***?

(A) Less than $29,000

(B) $29,000 but less than $30,000

(C) $30,000 but less than $31,000

(D) $31,000 but less than $32,000

(E) $32,000 or more

Data for Question 24 (2 points)

Consider the following statements that apply to single employer plans:

I. Other than prescribed assumptions, actuarial assumptions must individually and in combination present the actuary's best estimate of anticipated experience under the plan.

II. Other than mortality, interest, and retirement decrements, all other assumptions for at-risk plans are chosen by the actuary.

III. For plans with unfunded vested benefit liabilities of at least $50,000,000 based on assumptions used for PBGC purposes, all assumption changes must be approved by the IRS.

Question 24

Which, if any, of the above statement(s) is (are) true?

(A) I and II only

(B) I and III only

(C) II and III only

(D) I, II, and III

(E) The correct answer is not given by (A), (B), (C), or (D) above.

Data for Question 25 (5 points)

Type of plan: Multiemployer.

Plan effective date: 1/1/2000.

Normal retirement benefit:

Before 2010	$40 per month for each year of service.
After 2009	$45 per month for each year of service.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Initial accrued liability: $700,000.

Credit balance in funding standard account as of 12/31/2009: $40,000.

Selected valuation results as of 1/1/2010 before any benefit changes:

Actuarial (market) value of assets	$1,400,000
Entry age normal accrued liability	2,000,000
Present value of future benefits	3,200,000
Present value of future service	1,250
Number of participants	100

There are no inactive participants in the plan.

Question 25

In what range is the **smallest amount that satisfies the minimum funding standard** as of 1/1/2010?

(A) Less than $145,000

(B) $145,000 but less than $160,000

(C) $160,000 but less than $175,000

(D) $175,000 but less than $190,000

(E) $190,000 or more

Data for Question 26 (3 points)

Type of plan: Multiemployer.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Selected valuation results:

	1/1/2009	1/1/2010
Actuarial (market) value of plan assets	$2,300,000	$2,900,000
Accrued liability	3,500,000	4,250,000
Normal cost	425,000	425,000

On 12/31/2009, the plan sponsor contributed $600,000 to the plan.

The plan made no distributions during 2009.

Question 26

In what range is the absolute value as of 1/1/2010 of the asset (gain)/loss during 2009 as a percentage of the total (gain)/loss during 2009?

(A) Less than 60%

(B) 60% but less than 70%

(C) 70% but less than 80%

(D) 80% but less than 90%

(E) 90% or more

Data for Question 27 (4 points)

Normal retirement benefit: 2.5% of final year salary for each year of service.

Selected assumptions:

Segment rates	{5.0%, 6.0%, 7.0%}
Salary increases	5% per year

Funding standard carryover balance as of 1/1/2010: $5,800.

Prefunding balance as of 1/1/2010: $0.

Actuarial (market) value of assets at 1/1/2010: $72,000.

Data for sole plan participant Smith:

Date of birth	1/1/1966
Date of hire	1/1/1994
2009 salary	$100,000

Selected actuarial factors:

Interest rate	$\ddot{a}_{65}^{(12)}$
5%	10.00
6%	9.00
7%	8.00

7-year shortfall amortization factor: 5.9982.

The plan was exempt from setting a shortfall base for both the 2008 and 2009 plan years.

The employer makes a single contribution of ***$X*** on 1/1/2010 in the **smallest amount that satisfies the minimum funding standard** for the 2010 plan year.

Question 27

In what range is ***$X***?

(A) Less than $4,200

(B) $4,200 but less than $7,200

(C) $7,200 but less than $10,200

(D) $10,200 but less than $13,200

(E) $13,200 or more

Data for Question 28 (3 points)

Plan year: Calendar year.

Fiscal year: 2/1 – 1/31.

Effective interest rate: 6.0%

No benefits are payable before normal retirement age.

The plan has always provided a monthly normal retirement benefit of $25 for each year of service.

Selected valuation results:

	1/1/2009	1/1/2010
Actuarial (market) value of assets	$100,000	$210,000
Funding target	100,000	210,000
Target normal cost	81,000	81,000
Funding target using at-risk assumptions, for IRC section 404 purposes	110,000	240,000
Target normal cost using at-risk assumptions, for IRC section 404 purposes	86,000	90,000

There are 35 participants in the plan, all age 50.

The deductible limit is based on the plan year ending within the fiscal year.

Question 28

In what range is the deductible limit for the fiscal year ended 1/31/2010?

(A) Less than $100,000

(B) $100,000 but less than $125,000

(C) $125,000 but less than $150,000

(D) $150,000 but less than $175,000

(E) $175,000 or more

Data for Question 29 (3 points)

Valuation date: 1/1/2010.

Fair market value of assets at 1/1/2010 (excluding contributions receivable): $9,000,000.

Effective interest rates:

2009	5.6%
2010	6.1%

Contributions receivable for 2009 plan year:

Date	Amount
4/1/2010	$100,000
9/1/2010	200,000

Question 29

In what range is the upper limit on the actuarial value of assets as of 1/1/2010?

(A) Less than $10,210,000

(B) $10,210,000 but less than $10,220,000

(C) $10,220,000 but less than $10,230,000

(D) $10,230,000 but less than $10,240,000

(E) $10,240,000 or more

Data for Question 30 (3 points)

Plan effective date: 1/1/2000.

Valuation date: 1/1/2010.

Funding standard carryover balance as of 1/1/2010: $0.

Prefunding balance as of 1/1/2010: $20,000.

Selected valuation results as of 1/1/2010:

Actuarial (market) value of assets	$2,050,000
Funding target	2,200,000
Target normal cost	42,000

Shortfall amortization installments:

2008	$0
2009	25,000

Shortfall amortization factors for 2010:

7-year	5.9982
6-year	5.2932

Question 30

In what range is the **minimum required contribution** as of 1/1/2010?

(A) Less than $45,000

(B) $45,000 but less than $55,000

(C) $55,000 but less than $65,000

(D) $65,000 but less than $75,000

(E) $75,000 or more

Data for Question 31 (4 points)

Type of plan: Multiemployer.

Funding method: Unit credit.

Valuation interest rate:

Before 2010	8.0%
After 2009	7.5%

All funding standard account amortization bases as of 1/1/2009:

Date established	Outstanding balance	Years remaining	Charge
1/1/2009	$500,000	15	$54,088
1/1/2008	400,000	14	44,925

Credit balance in funding standing account as of 12/31/2009: $75,000.

Selected valuation results as of 1/1/2010:

Actuarial (market) value of assets	$19,500,000
Accrued liability calculated at 8.0%	20,000,000
Accrued liability calculated at 7.5%	22,500,000
Normal cost calculated at 7.5%	1,000,000

A single contribution of ***$X*** is to be made on 1/1/2010 in the **smallest amount that satisfies the minimum funding standard** for the 2010 plan year.

Question 31

In what range is ***$X***?

(A) Less than $1,250,000

(B) $1,250,000 but less than $1,255,000

(C) $1,255,000 but less than $1,260,000

(D) $1,260,000 but less than $1,265,000

(E) $1,265,000 or more

Data for Question 32 (4 points)

Type of plan: Multiemployer.

Valuation date: 1/1/2010.

Valuation interest rate: 7%.

As of the valuation date, there are 100 retirees aged 65, each in receipt of a 4-year certain and life annuity of $2,000 per year, payable the first of each year.

Selected commutation function values:

Age	N_x	D_x	q_x
65	113,457	10,981	0.011
69	74,340	7,933	0.018

One of the retirees died during 2010.

Question 32

In what range is the absolute value of the mortality gain or loss as of 1/1/2011?

(A) Less than $1,400

(B) $1,400 but less than $1,500

(C) $1,500 but less than $1,600

(D) $1,600 but less than $1,700

(E) $1,700 or more

Data for Question 33 (2 points)

Valuation date: 1/1/2010.

Funding standard carryover balance as of 1/1/2010: $5,000.

Prefunding balance as of 1/1/2010: $0.

Selected valuation results as of 1/1/2010:

Actuarial (market) value of assets	$978,000
Funding target	1,000,000
Target normal cost	50,500

There are no shortfall amortization bases from prior years.

Shortfall amortization factor for 2010: 5.9982.

The employer makes a single contribution of ***$X*** on 1/1/2010 in the **smallest amount that satisfies the minimum funding standard** for the 2010 plan year.

Question 33

In what range is ***$X***?

(A) Less than $46,000

(B) $46,000 but less than $48,000

(C) $48,000 but less than $50,000

(D) $50,000 but less than $52,000

(E) $52,000 or more

Data for Question 34 (2 points)

Valuation date: 1/1/2010.

Normal retirement benefit: 1% of five-year final average compensation for each year of service.

Data for participant Smith:

Date of birth	1/1/1945
Date of hire	1/1/1997

Year	Compensation
2005	$48,000
2006	51,000
2007	54,000
2008	57,000
2009	60,000

Smith is not a key employee.

The plan was determined to be top-heavy for the 2002 and all subsequent plan years.

Question 34

In what range is Smith's annual accrued benefit as of 1/1/2010?

(A) Less than $8,500

(B) $8,500 but less than $10,500

(C) $10,500 but less than $12,500

(D) $12,500 but less than $14,500

(E) $14,500 or more

Data for Question 35 (3 points)

Type of plan: Multiemployer.

Actuarial cost method: Aggregate.

Valuation date: 1/1/2010.

Valuation interest rate: 6%.

Funding standard account credit balance as of 12/31/2009: $25,000.

Selected valuation results as of 1/1/2010:

Market value of assets	$500,000
Actuarial value of assets	570,000
Present value of projected benefits	2,500,000
Present value of future compensation	15,000,000
Total compensation for participants below age 65	1,000,000

The employer makes a single contribution of ***$X*** on 12/31/2010 in the **smallest amount that satisfies the minimum funding standard** for the 2010 plan year.

Question 35

In what range is ***$X***?

(A) Less than $103,000

(B) $103,000 but less than $107,000

(C) $107,000 but less than $111,000

(D) $111,000 but less than $115,000

(E) $115,000 or more

Data for Question 36 (3 points)

Type of plan: Multiemployer.

Valuation date: 1/1/2010.

Valuation interest rate: 6%.

Total benefit payments for 2009 plan year, made on 7/1/2009: $100,000.

Contribution for 2009: $200,000 paid 4/1/2009.

Selected valuation results:

	1/1/2009	1/1/2010
Market value of assets	$950,000	$1,100,000
Actuarial value of assets	1,000,000	1,200,000

Question 36

In what range is the absolute value of the asset (gain)/loss during 2009?

(A) Less than $8,000

(B) $8,000 but less than $17,000

(C) $17,000 but less than $26,000

(D) $26,000 but less than $35,000

(E) $35,000 or more

Data for Question 37 (3 points)

Plan effective date: 1/1/2000.

Normal retirement benefit: 10% of final 5-year average compensation for each year of participation, with a maximum of 10 years of participation.

Data for participant Smith:

Date of birth	1/1/1952
Date of hire	1/1/2004
Date of participation	1/1/2005

Year	Compensation
2005	$170,000
2006	200,000
2007	190,000
2008	200,000
2009	250,000

Question 37

In what range is Smith's accrued benefit as of 12/31/2009?

(A) Less than $100,000

(B) $100,000 but less than $110,000

(C) $110,000 but less than $120,000

(D) $120,000 but less than $130,000

(E) $130,000 or more

Data for Question 38 (3 points)

Normal retirement benefit: $100 per month for each year of service.

The last benefit increase was effective on 1/1/2000.

Effective interest rate: 5.5%.

Plan participants at 1/1/2010: 600.

Selected valuation results as of 1/1/2010:

Market value of assets	$950,000
Actuarial value of assets	900,000
Funding target	1,100,000
Target normal cost	90,000
Funding target using at-risk assumptions for IRC section 404 purposes	1,300,000
Target normal cost using at-risk assumptions for IRC section 404 purposes	100,000

Question 38

In what range is the deductible limit for the 2010 plan year?

(A) Less than $435,000

(B) $435,000 but less than $635,000

(C) $635,000 but less than $835,000

(D) $835,000 but less than $1,035,000

(E) $1,035,000 or more

Data for Question 39 (2 points)

Type of plan: Cash balance.

Death benefit eligibility for unmarried participants: 5 years of service.

Death benefit: Account balance paid at end of year of death.

Valuation date: 1/1/2010.

Segment rates: {5.0%, 6.0%, 7.0%}.

Selected assumptions:

Future interest crediting rate	6%
${}_{4}p_{61}$	0.98237
Assumed form of payment	Lump sum

No decrements before retirement other than mortality are assumed.

Data for sole plan participant Smith as of 1/1/2010:

Age	61
Years of service	1
Account balance	$200,000
Marital Status	Single

Question 39

In what range is the funding target for participant Smith as of 1/1/2010?

(A) Less than $192,000

(B) $192,000 but less than $197,000

(C) $197,000 but less than $202,000

(D) $202,000 but less than $207,000

(E) $207,000 or more

Data for Question 40 (2 points)

The actuary for a multiemployer plan is considering the following mortality tables for the purpose of calculating the accrued liability for minimum funding purposes:

A. Mortality tables used by insurance companies in developing individual annuities

B. Mortality tables used by insurance companies in developing group annuities

C. Mortality experience based on the general population in the United States

Consider the following statements:

I. With respect to the general characteristics of this pension plan's participants, of the above mortality tables, Table A would generally be the most appropriate for use in calculating the plan's accrued liability.

II. Table A would generally have higher rates of mortality than Table B.

III. Table C would generally have higher rates of mortality than Table B.

Question 40

Which, if any, of the above statement(s) is (are) true?

(A) None

(B) I only

(C) II only

(D) III only

(E) The correct answer is not given by (A), (B), (C), or (D) above

Data for Question 41 (4 points)

Valuation date: 1/1/2010.

Normal retirement benefit:

Before 2010	\$25 per month for each year of service
After 2009	\$30 per month for each year of service

Early retirement benefit: Unreduced at age 62 with 30 years of service.

2009 and 2010 segment rates: {5.0%, 6.0%, 7.0%}.

Assumptions for 2009 and 2010 plan years:

Retirement rates	40% at age 62 and 100% at age 65
Pre-retirement mortality	None

Data for sole participant:

Date of birth	1/1/1948
Date of hire	1/1/1975

Selected commutation functions:

	Segment rate 1		Segment rate 2		Segment rate 3	
Age	$N_x^{(12)}$	D_x	$N_x^{(12)}$	D_x	$N_x^{(12)}$	D_x
62	5,755	457	2,932	254	1,510	142
65	4,487	386	2,238	208	1,128	113
67	3,758	342	1,847	181	917	97
70	2,819	282	1,356	146	659	75
82	589	102	257	47	114	22
85	327	68	141	30	61	14

Question 41

In what range is the increase in the funding target as of 1/1/2010 due to the plan amendment?

(A) Less than \$20,600

(B) \$20,600 but less than \$23,600

(C) \$23,600 but less than \$26,600

(D) \$26,600 but less than \$29,600

(E) \$29,600 or more

Data for Question 42 (4 points)

Plan effective date: 1/1/2000.

Funding standard carryover balance at 1/1/2010: $0.

Prefunding balance at 1/1/2010: $0.

Selected valuation results as of 1/1/2010:

Market value of assets	$2,700,000
Actuarial value of assets	2,970,000
Funding target	3,400,000
Target normal cost	80,000
7-year amortization factor	5.9982
6-year amortization factor	5.2932
5-year amortization factor	4.5460
2008 shortfall amortization installment	30,000
2009 shortfall amortization installment	25,000

The plan was subject to IRC section 412(*l*) for the 2007 plan year.

Question 42

In what range is the **minimum required contribution** as of 1/1/2010?

(A) Less than $140,000

(B) $140,000 but less than $160,000

(C) $160,000 but less than $180,000

(D) $180,000 but less than $200,000

(E) $200,000 or more

Data for Question 43 (4 points)

Type of plan: Multiemployer.

Valuation date: 1/1/2010.

Actuarial cost method: Aggregate.

Valuation interest rate: 7% per year.

Actuarial (market) value of assets as of 1/1/2009: $900,000.

2009 plan year contributions:

Date	Amount
4/1/2009	$35,000
7/1/2009	35,000
10/1/2009	35,000
12/31/2009	35,000

2009 retiree benefit payments made 7/1/2009: $60,000.

2009 actual return on assets: 5.5%.

Credit balance in funding standard account as of 12/31/2009: $0.

Selected valuation results as of 1/1/2010:

Present value of future benefits	$1,800,000
Present value of future compensation	3,250,000
Total compensation	150,000

Question 43

In what range is the value of the change in normal cost for minimum funding as of 1/1/2010 due to investment experience?

(A) Less than $630

(B) $630 but less than $650

(C) $650 but less than $670

(D) $670 but less than $690

(E) $690 or more

Data for Question 44 (4 points)

Plan effective date: 1/1/2008.

Normal retirement benefit: $75 per month for each year of service.

Segment rates at 1/1/2010: {4.0%, 5.0%, 6.0%}.

Prefunding balance at 1/1/2009: $0.

Prefunding balance at 1/1/2010: $200.

Selected valuation results:

	1/1/2009	1/1/2010
Actuarial (market) value of assets		$10,000
Funding shortfall	$1,600	
7-year shortfall amortization factor	5.9982	6.1596
6-year shortfall amortization factor	5.2932	5.4134
Funding target attainment percentage	75%	

Data for sole participant Smith:

Date of birth	1/1/1953
Date of hire	1/1/2008

Selected commutation functions:

	Segment rate 1		Segment rate 2		Segment rate 3	
Age	$N_x^{(12)}$	D_x	$N_x^{(12)}$	D_x	$N_x^{(12)}$	D_x
65	90,763	7,149	44,770	3,838	22,323	2,073
77	27,711		12,564		5,750	113

The employer makes a single contribution of ***$X*** on 1/1/2010 in the **smallest amount that satisfies the minimum funding standard** for 2010.

Question 44

In what range is ***$X***?

(A) Less than $7,000

(B) $7,000 but less than $7,200

(C) $7,200 but less than $7,400

(D) $7,400 but less than $7,600

(E) $7,600 or more

Data for Question 45 (3 points)

Valuation date: 1/1/2010.

Effective interest rate: 5.5% per year.

Selected valuation results as of 1/1/2010:

Actuarial (market) value of assets	$350,000
Funding target	400,000
Target normal cost	50,000
Increase in funding target due to future earnings increases	65,000
Funding target using at-risk assumptions, for IRC section 404 purposes	600,000
Target normal cost using at-risk assumptions, for IRC section 404 purposes	60,000

Question 45

In what range is the deductible limit for 2010?

(A) Less than $291,000

(B) $291,000 but less than $323,000

(C) $323,000 but less than $355,000

(D) $355,000 but less than $387,000

(E) $387,000 or more

Data for Question 46 (3 points)

Plan effective date: 1/1/2008.

Prefunding balance as of 1/1/2010: $100,000.

Selected valuation results as of 1/1/2010:

Actuarial value of assets	$2,125,000
Funding target	2,100,000
Target normal cost	205,000

Shortfall amortization installments:

2008	$0
2009	28,000

Shortfall amortization factors for 2010:

7-year	5.9982
6-year	5.2932

Question 46

In what range is the **minimum required contribution** as of 1/1/2010?

(A) Less than $200,000

(B) $200,000 but less than $215,000

(C) $215,000 but less than $230,000

(D) $230,000 but less than $245,000

(E) $245,000 or more

Data for Question 47 (4 points)

Type of plan: Multiemployer plan.

Funding method: Unit credit.

Early retirement age: 55.

Early retirement benefit: Accrued benefit reduced by 6% for each of the first six years and by 5% for each of the next four years by which the benefit commencement date precedes the normal retirement date.

Selected actuarial assumptions:

Interest rate	6.0%
Retirement age	65

Selected annuity values:

Age	$\ddot{a}_x^{(12)}$
55	13.70
59	13.00
62	12.40
65	11.70

Data for selected plan participants:

Name	Date of birth	Accrued benefit at 12/31/2009
Smith	1/1/1948	$725
Jones	1/1/1951	$375
Brown	1/1/1955	$150

All three participants retire on 12/31/2009 and begin receiving their benefits on 1/1/2010.

Question 47

The retirements of which, if any, of the participants will result in an experience loss?

(A) Smith and Jones only

(B) Smith and Brown only

(C) Jones and Brown only

(D) Smith, Jones, and Brown

(E) The correct answer is not given by (A), (B), (C), or (D) above.

Data for Question 48 (3 points)

Plan effective date: 1/1/2000.

Valuation date: 1/1/2010.

Funding standard carryover balance at 1/1/2010: $0.

Prefunding balance as of 1/1/2010: $20,000.

Selected valuation results as of 1/1/2010:

Actuarial (market) value of assets	$910,000
Funding target	1,000,000
Target normal cost	75,000

Shortfall amortization installment for base established 1/1/2009: $15,000.

There was no shortfall amortization base established in 2008.

Amortization factors for 2010 plan year for shortfall amortization installments:

Years	Factor
5 years	4.5459
6 years	5.3295
7 years	6.0757

The employer makes a single contribution of ***$X*** on 1/1/2010 in **the smallest amount that satisfies the minimum funding standard** for the 2010 plan year.

Question 48

In what range is ***$X***?

(A) Less than $64,000

(B) $64,000 but less than $66,000

(C) $66,000 but less than $68,000

(D) $68,000 but less than $70,000

(E) $70,000 or more

Data for Question 49 (4 points)

IRC section 417(e) segment rates: {5.0%, 6.0%, 6.5%}.

Data for participant Smith:

Date of birth	1/1/1945
Date of hire	1/1/1990
Date of participation	1/1/1995
Normal retirement benefit	$25,000 per year payable monthly

Selected commutation functions based on IRC section 417(e) applicable mortality:

	Segment rate 1		Segment rate 2		Segment rate 3	
Age	$N_x^{(12)}$	D_x	$N_x^{(12)}$	D_x	$N_x^{(12)}$	D_x
65	713,162	51,213	368,975	28,999	266,552	21,866
70	482,841	38,821	240,861	20,965	170,799	15,440
85	309,979	28,602	149,149	14,731	103,844	10,597

Selected annuity value using the plan's lump sum basis:

$$\ddot{a}_{65}^{(12)} = 11.31$$

On 1/1/2010, Smith retired and elected a lump sum payment.

Question 49

In what range is the amount of the lump sum payable to Smith as of 1/1/2010?

(A) Less than $285,000

(B) $285,000 but less than $305,000

(C) $305,000 but less than $325,000

(D) $325,000 but less than $345,000

(E) $345,000 or more

Data for Question 50 (4 points)

Early retirement age: 55 with 20 years of service.

Early retirement benefit: Accrued benefit, payable immediately.

Vested termination benefit, if fewer than 20 years of service: Accrued benefit, payable at age 65.

Select participant data:

	Smith	Jones	Brown
Date of birth	1/1/1955	1/1/1960	1/1/1955
Date of hire	1/1/1990	1/1/1995	1/1/2000
Monthly accrued benefit	\$1,500	\$1,125	\$750

Selected assumptions for 414(*l*) calculations:

Interest	7% per year
Pre-retirement decrements	None
Retirement age	Earliest eligibility

Selected commutation functions to be used for 414(*l*) calculations:

Age	D_x	$N_x^{(12)}$
55	229,697	2,724,628
60	159,659	1,757,789
65	109,332	1,089,694

The plan is over 100% funded based on IRC section 414(*l*).

The assumptions are deemed reasonable.

On 1/1/2010, the benefits for Smith, Jones, and Brown are spun off into another qualified defined benefit plan maintained by an employer outside of the controlled group.

Question 50

In what range is the minimum asset value that must be allocated to Smith, Jones, and Brown to meet the requirements of IRC section 414(*l*)?

(A) Less than \$220,000

(B) \$220,000 but less than \$270,000

(C) \$270,000 but less than \$320,000

(D) \$320,000 but less than \$370,000

(E) \$370,000 or more

Data for Question 51 (4 points)

Type of Plan: Multiemployer.

Effective date: 1/1/2005.

Normal retirement benefit: $30 per month per year of service.

Early retirement eligibility: Age 60.

Early retirement benefit: Accrued benefit payable immediately.

Vesting: Immediate.

Valuation interest rate: 7% per year.

Data for participant Smith:

Date of birth	1/1/1949
Date of hire	1/1/2009

Selected factors:

Age	$\ell_x^{(r)}$	$\ddot{a}_x^{(12)}$
61	690	10.94
62	580	10.68
63	0	10.46

All retirements are assumed to occur at the end of the year.

Question 51

In what range is the present value of future benefits attributable to Smith's retirement benefit as of 1/1/2010?

(A) Less than $10,000

(B) $10,000 but less than $12,000

(C) $12,000 but less than $14,000

(D) $14,000 but less than $16,000

(E) $16,000 or more

Data for Question 52 (3 points)

Normal retirement benefit: $100 per month per year of service.

Segment rates: {5.0%, 6.0%, 7.0%}.

Data for sole participant Smith:

Date of birth	1/1/1949
Date of hire	1/1/2000

Selected commutation factors:

	Segment 1		Segment 2		Segment 3	
Age	$N_x^{(12)}$	D_x	$N_x^{(12)}$	D_x	$N_x^{(12)}$	D_x
65	45,046	3,862	22,460	2,085	11,315	1,132
66	41,286	3,640	20,438	1,947	10,221	1,048
67	37,744	3,426	18,552	1,815	9,210	968
…						
80	8,188	1,275	3,666	597	1,656	282
81	6,971	1,147	3,099	532	1,390	249
82	5,880	1,024	2,595	471	1,155	218

Question 52

In what range is the funding target as of 1/1/2010?

(A) Less than $95,000

(B) $95,000 but less than $100,000

(C) $100,000 but less than $105,000

(D) $105,000 but less than $110,000

(E) $110,000 or more

Data for Question 53 (3 points)

Funding target attainment percentage as of 1/1/2008: 105%.

Effective interest rate for 2009: 6.0%.

Funding standard carryover balance at 1/1/2009: $0.

Prefunding balance at 1/1/2010: $0.

Valuation results as of 1/1/2009:

Funding target	$500,000
Target normal cost	100,000
Value of plan assets	500,000

Contribution for 2009: $50,000, contributed on 9/15/2010.

Question 53

In what range is the initial excise tax due under IRC Section 4971(a) on the unpaid minimum required contribution for the 2009 plan year?

(A) Less than $5,500

(B) $5,500 but less than $6,000

(C) $6,000 but less than $6,500

(D) $6,500 but less than $7,000

(E) $7,000 or more

Data for Question 54 (3 points)

Plan effective date: 1/1/2000.

Benefit formula: $75 per month for each year of service.

Segment rates as of 1/1/2010: {4.0%, 5.0%, 6.0%}.

7-year shortfall amortization factor: 6.1596.

Funding standard carryover balance and prefunding balance are both $0 as of 1/1/2010.

Funding target attainment percentage as of 1/1/2010 is 95%.

Data for sole participant Smith:

Date of birth	1/1/1970
Date of hire	1/1/2000
Date of termination	7/1/2009

Selected commutation functions:

	Segment rate 1	Segment rate 2	Segment rate 3
$N_{65}^{(12)}$	90,763	44,770	22,323
D_{65}	7,149	3,838	2,073

$X = the decrease in the **minimum required contribution** for the 2010 plan year as of 1/1/2010 due to Smith's termination.

Question 54

In what range is ***$X***?

(A) Less than $2,000

(B) $2,000 but less than $2,200

(C) $2,200 but less than $2,400

(D) $2,400 but less than $2,600

(E) $2,600 or more

Data for Question 55 (2 points)

Consider the following statements regarding funding rules under PPA:

I. The at-risk target normal cost includes a load if a plan is in at-risk status and has been in at-risk status for any two out of the prior four years.

II. The target normal cost includes the excess of the at-risk normal cost over the not-at-risk normal cost multiplied by 20% times the total number of years the plan has been in at-risk status out of the last five years.

III. The at-risk funding target can be less than the funding target calculated without at-risk assumptions.

Question 55

Which, if any, of the above statement(s) is (are) true?

(A) None

(B) I only

(C) II only

(D) III only

(E) The correct answer is not given by (A), (B), (C), or (D) above.

Data for Question 56 (4 points)

Type of plan: Multiemployer.

Actuarial cost method: Unit credit.

Valuation interest rate: 8% per year.

Selected valuation results as of 1/1/2009:

Accrued liability	$950,000
Actuarial (market) value of assets	800,000
Normal cost	850,000

2009 plan year contribution: $950,000, made on 10/1/2009.

Effective 1/1/2010, the plan formula was amended to increase the active liability by 10%, for all service.

Increase in accrued liability due to change in mortality assumption effective 1/1/2010:

Active participants	7.00%
Inactive participants	5.00%

Selected valuation results as of 1/1/2010, after increase for mortality assumption and change in plan formula:

Accrued liability (actives only)	$2,050,000
Accrued liability (inactives only)	250,000
Actuarial (market) value of assets	1,600,000

Question 56

In what range is the absolute value of the actuarial (gain)/loss base established at 1/1/2010?

(A) Less than $275,000

(B) $275,000 but less than $350,000

(C) $350,000 but less than $425,000

(D) $425,000 but less than $500,000

(E) $500,000 or more

Data for Question 57 (2 points)

Asset valuation method: Fair market value.

Fair market value of assets as of 1/1/2010 (excluding receivable contributions): $1,000,000.

Contributions for the 1/1/2009 plan year:

Date	Amount
7/1/2009	$25,000
9/1/2010	300,000

Effective interest rate:

1/1/2009 plan year:	5.00%
1/1/2010 plan year:	5.75%

Question 57

In what range is the value of plan assets as of 1/1/2010 for purposes of determining contribution requirements for the 1/1/2010 plan year?

(A) Less than $1,290,000

(B) $1,290,000 but less than $1,295,000

(C) $1,295,000 but less than $1,300,000

(D) $1,300,000 but less than $1,305,000

(E) $1,305,000 or more

Data for Question 58 (4 points)

Effective date: 1/1/2004.

Normal retirement benefit: 7.5% of final 4-year average compensation for each year of service.

Early retirement benefit: Actuarial equivalent of accrued benefit.

Death benefit: Present value of accrued benefit.

Normal retirement age: 62.

Early retirement eligibility: Age 55 and 5 years of service.

Plan actuarial equivalence:

Interest rate	6%
Mortality	Applicable mortality table

Data for sole plan participant Smith:

Date of birth	12/31/1952
Date of hire	12/31/2001

Year	Compensation
2006	$200,000
2007	230,000
2008	250,000
2009	250,000

Selected values of $\ddot{a}_x^{(12)}$ using the applicable mortality table:

Age	5%	6%
57	14.06	12.74
62	12.68	11.61
65	11.79	10.87

Question 58

In what range is participant Smith's annual benefit payable commencing 12/31/2009?

(A) Less than $70,000

(B) $70,000 but less than $80,000

(C) $80,000 but less than $90,000

(D) $90,000 but less than $100,000

(E) $100,000 or more

Data for question 59 (2 points)

Early retirement eligibility: Age 60 with 10 years of service.

Early retirement benefits:

Age 60 with 10 years of service	Accrued benefit, reduced 5% per year by which benefits commence before age 62
Age 60 with 30 years of service	Accrued benefit without reduction for early retirement

Termination benefits: Benefits begin as early as age 60, reduced 6% per year by which benefits commence before age 65.

The plan has over 1,000 active participants.

Consider the following proposed assumed rates of termination/retirement, as applied to a participant age 58 with 27 years of service as of the valuation date:

		Assumed rates of termination / retirement				
Age	Years of Service	Table I	Table II	Table III	Table IV	Table V
58	27	10%	5%	10%	0%	15%
59	28	10%	5%	10%	0%	15%
60	29	10%	30%	80%	0%	10%
61	30	10%	80%	10%	0%	25%
62	31	10%	35%	10%	0%	25%
63	32	10%	25%	10%	0%	25%
64	33	10%	25%	10%	0%	25%
65	34	100%	100%	100%	100%	100%

The actuary has no credible past experience regarding retirement patterns for this group.

Question 59

Considering only the information presented above, which of the above proposed sets of decrements is the most appropriate?

(A) Table I

(B) Table II

(C) Table III

(D) Table IV

(E) Table V

****END OF EXAMINATION****